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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,045	08/27/2001	Stefan Marghuerite Jean Willems	BE 000017	4484

24737 7590 06/16/2005

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER

CHAU, COREY P

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/940,045

Applicant(s)

WILLEMS, STEFAN
MARGHUERITE JEAN

Examiner

Corey P. Chau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 5-10 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Regarding Claim 10, recites "first and second delay circuits coupled, respectively, to said third and fourth sixth-order filters, respective outputs from said first and second delay circuits being coupled to respective second inputs of said first and second combination circuits" which renders the claim indefinite because it is unclear to the Examiner as to what the Applicant is claiming as their invention. The claim is inconsistent with the drawings and specification.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8, 5, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6067360 to Kasai et al. (hereafter as Kasai).

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6. Regarding Independent Claim 8, Kansai an apparatus for localizing a sound image and a method for localizing the same comprising: input means for receiving input left and right front sound signals (F_L, F_R) and input left and right rear sound signals (S_L, S_R); left and right front loudspeakers ($4L, 4R$) for reproducing sounds corresponding to said input left and right front sound signals; **generating means (Figs. 1, 5, and 8)**, coupled to receive said input left and right front and rear sound signals, for generating left and right virtual sound signals (Figs. 1, 5, 7, and 8; column 5, lines 48-67); and means for combining the left and right virtual sound signals and the input left and right front sound signals ($18L, 18R$), respectively, to form output left and right front sound signals for application to said left and right front loudspeakers (Figs. 1, 5, 7, and 8), wherein said left and right front loudspeakers reproduce both said sounds corresponding to said input left and right front sound signals and left and right virtual sounds corresponding to said left and right virtual sound signals (Figs. 2, 4, and 6; column 2, lines 32-48), said generating means generates said left and right virtual sound signals such that the left and right virtual sounds emanating from said left and right front loudspeakers appear, to a listener, to originate from virtual left and right loudspeakers positioned in a region between 80 and 100 degrees with respect to the listener (Figs. 2, 4, and 6; column 5, line 48 to column 6, line 7). Kasai does not expressly disclose left and right rear loudspeakers for reproducing sounds corresponding to said input left and right rear sound signals. However, the Examiner takes official notice that it is well known in the art to provide the left and right rear sound signals (S_L, S_R) to left and right rear loudspeakers due to the fact that a proportion of

multi-media user will already possess, or will buy a 4 (or more) speaker configuration to cater for alternative formats, such as Dolby Digital.

7. Regarding Claim 5, Kasai as modified does not expressly disclose generating means comprises a low-pass filter for filtering the left and right rear sound signals.

However it would have been obvious to one having ordinary skill in the art to provide a low-pass filter for the left and right rear sound signals in order to filter out high frequencies, therefore providing a desired frequency range.

8. Regarding Claim 6, Kasai as modified discloses left and right rear loudspeakers for reproducing sounds corresponding to said input left and right rear sound signals, but does not expressly disclose the generating means comprises a delay circuit for delaying the left and right rear sound signals. However it would have been obvious to one having ordinary skill in the art to provide a delay for the left and right rear sound signals in order to compensate for the delay cause by the filters, as applied to the other sound signals (Figs. 1, 5, 7, and 8; column 5, lines 31-47; column 6, lines 57-60).

9. Regarding Claim 9, Kasai as modified discloses said generating means comprises: first combining means for combining said input left front sound signal with said input left rear sound signal (16L); second combining means for combining said input right front sound signal with said input right rear sound signal (16R); and a virtual filter coupled to said first and second combining means (Figs. 1, 5, 7, and 8), said virtual filter forming said left and right virtual sound signals (Figs. 2, 4, and 6; column 2, lines 32-48).

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6067360 to Kasai in view of U.S. Patent No. 5412732 to Kanishi et al. (hereafter as Kanishi).

11. Regarding Claim 7, Kasai as modified does not expressly disclose the generating means comprises a reverberation circuit to which the left and right rear sound signals is applied. Kanishi discloses a stereo surround system comprising a reverberation sound generation circuit, wherein the reverberation sound generation circuit reproduces sound with more felling of a concert hall presence and three dimensional sound field (column 8, line 66 to column 9, line 9). Therefore it would have been obvious to one having ordinary skill in the art to modify Kasai as modified with the teaching of Kanishi to incorporate a reverberation sound generating circuit in the generating means to which the left and right rear sound signals is applied in order to reproduce sound with more felling of a concert hall presence and three dimensional sound field.

Response to Arguments

12. Applicant's arguments filed 3/25/05 have been fully considered but they are not persuasive.

13. With respect to the applicant's arguments on page 6, stating that, "Examiner is misreading claim 10" has been noted. The Examiner however respectfully disagrees. The Examiner did not misread claim 10, but did type that part of claim 10 wrong. It should read "first and second delay circuits coupled, respectively, to said third and fourth sixth-order filters, respective outputs from said first and second delay circuits

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being coupled to respective second inputs of said first and second combination circuits”.

Therefore claim 10 still stand indefinite because it is unclear to the Examiner as to what the Applicant is claiming as their invention. The claim is inconsistent with the drawings and specification.

14. With respect to the applicant's arguments on page 8, has been noted. The Examiner however respectfully disagrees. Kasai discloses an apparatus for localizing a sound image and a method for localizing the same, but is not limited by the embodiments disclosed. It is well known in the art to connect loudspeakers, such as left and right rear loudspeakers directly to the input left and right rear sound signals provided as shown in Fosgate (U.S. Patent No. 5199075) for example (Fig. 1), which is one of many prior arts that discloses loudspeakers directly connected to inputted left and right rear sound signals. Therefore it would have been obvious to one skill in the art to also provide the input left and right rear sound signals (S_L, S_R) directly to left and right rear loudspeakers provided, in which a portion of multi-media user will already possess, or will buy a 4 (or more) loudspeakers configuration to cater for alternative formats, such as Dolby Digital. Therefore, Kansai as modified discloses an apparatus for localizing a sound image and a method for localizing the same comprising: input means for receiving input left and right front sound signals (F_L, F_R) and input left and right rear sound signals (S_L, S_R); left and right front loudspeakers ($4L, 4R$) for reproducing sounds corresponding to said input left and right front sound signals; left and right rear loudspeakers for reproducing sounds corresponding to said input left and right rear sound signals (i.e. when 4 speakers are provided, the input S_L is also connected directly

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to left rear speaker and the input S_R is also connected directly to right rear speaker); generating means (Figs. 1, 5, and 8), coupled to receive said input left and right front and rear sound signals, for generating left and right virtual sound signals (Figs. 1, 5, 7, and 8; column 5, lines 48-67); and means for combining the left and right virtual sound signals and the input left and right front sound signals (18L,18R), respectively, to form output left and right front sound signals for application to said left and right front loudspeakers (Figs. 1, 5, 7, and 8), wherein said left and right front loudspeakers reproduce both said sounds corresponding to said input left and right front sound signals and left and right virtual sounds corresponding to said left and right virtual sound signals (Figs. 2, 4, and 6; column 2, lines 32-48), said generating means generates said left and right virtual sound signals such that the left and right virtual sounds emanating from said left and right front loudspeakers appear, to a listener, to originate from virtual left and right loudspeakers positioned in a region between 80 and 100 degrees with respect to the listener (Figs. 2, 4, and 6; column 5, line 48 to column 6, line 7).

15. With respect to the applicant's arguments on page 8, stating that, "There is no indication of left and right rear signals" has been noted. The Examiner however respectfully disagrees. Kasai discloses S_L , which reads on the left rear signal and S_R , which reads on the right rear signal. See Fig. 1 and column 5, lines 14-30.

16. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., low-pass filters filter the input left and right rear sound signals prior to being processing and combined with the input left and right front sound signals. Since the

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input signals in the subject invention are left and right rear sound signals, the low-pass filtering is needed in order to simulate surround signals) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

17. Applicant's arguments with respect to claim 6 have been considered but are moot in view of the new ground(s) of rejection. See Claim 8.

18. In response to applicant's argument that "Kanishi et al. does not supply that which is missing from Kasai et al., i.e. processing input left and right front sound signals along with input left and right rear sound signals, to generate signals for left and right front speakers, along with the input left and right rear sound signals for left and right rear speakers, so that the sound signals from these speakers produce virtual surround speakers to the left and right of the listener", the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P. Chau whose telephone number is (571)272-7514. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Sinh can be reached on (571)272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 9, 2005

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XU MEI
PRIMARY EXAMINER